

2011 Military Health System Conference

**Research Contributing to Psychological Health and
Traumatic Brain Injury Programs and Guidance**

The Quadruple Aim: Working Together, Achieving Success

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24 January 2011



Defense Centers of Excellence for Psychological Health and
Traumatic Brain Injury

Agenda



- Surveillance
- Psychological Health
 - *inTransition* Program
 - Respect-Mil Program
- Traumatic Brain Injury
 - Directive Type Memorandum (DTM) #09-033
 - Cognitive Rehabilitation Therapy
 - Hyperbaric Oxygen
 - Neuroendocrine Dysfunction
 - Driving Assessments after traumatic brain injury (TBI)

Surveillance



- 2795 Predeployment Health Assessment (1998)
- 2796 Post Deployment Health Assessment (1998)
 - Modified April 2003 – PTSD Screening
 - Modified late 2007 – TBI
- 2900 Post Deployment Health Assessment (2005)
 - Modified late 2007
- All being modified in 2011

The *inTransition* Program: Maintaining Continuity of Care Across Transitions



- *inTransition* is a Department of Defense (DoD) program created to assist service members who are receiving mental health services while transitioning between health care systems or providers
- Developed in response to the DoD Mental Health Task Force recommendation to “Maintain continuity of care across transitions” (5.2.2)
- Provides voluntary one-on-one coaching to service members
- Designed as a bridge of support for service members when:
 - Relocating to another assignment
 - Returning from deployment
 - Transitioning from active duty to reserve, reserve to active duty, or returning to civilian life

Transitions Between Care Settings



- Identifiable problems with half or more transitions
- Adverse consequences in 15-25% of patients
- Re-hospitalization in 20-30% within 60 days of discharge
- Effective transitional processes linked with strong home care can reduce re-hospitalization by 33-50% (Boling, CLIN GERIATR MED 2009)

Re-Engineering Systems of Primary Care Treatment in the Military

Defense Centers of Excellence for Psychological Health & TBI
Office of The Surgeon General, Army
Deployment Health Clinical Center
Uniformed Services University
3CM®

Primary Care Intervention is Evidence-Based

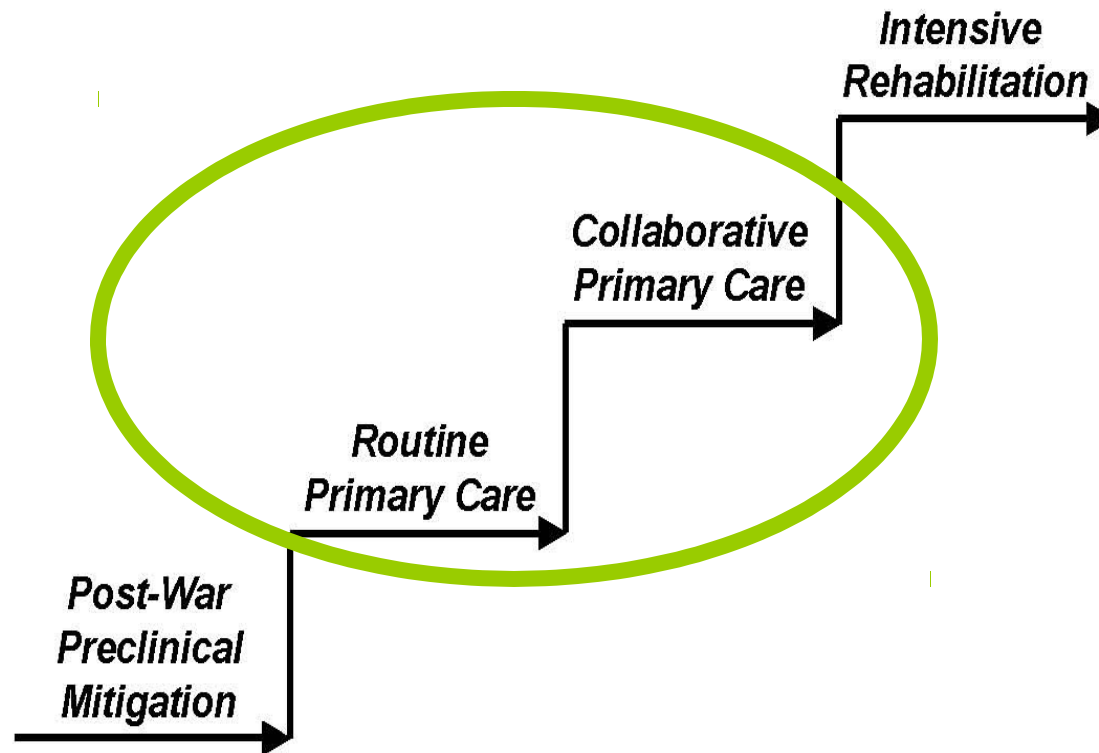


Randomized trials offer sound evidence that systems

level approaches benefit...

- Depression (e.g., IMPACT Trial BMJ 2006)
- Suicidal ideation & depression (Bruce et al, JAMA 2004)
- Depression and physical illness (e.g., Lin et al, JAMA, 2003)
- PTSD and physical injury (Zatzick, AGP, 2004)
- Panic disorder (e.g., Roy-Byrne et al, AGP 2005)
- Somatic symptoms (e.g., Smith et al, AGP 1995)
- Health anxiety (e.g., Barsky et al, JAMA 2004)
- Substance dependence (e.g., O'Connor et al. Am J Med. 1998)
- Dementia (e.g., Callahan et al, JAMA 2006)

Primary Care: The Fulcrum for Deployment Health Services



*Engel et al, 2004, Can We Prevent A Second Gulf War Syndrome?
Advances in Psychosomatic Medicine*

Feasibility Study in 2005-06 - Robinson TMC



MILITARY MEDICINE, 173, 10:935, 2008

RESPECT-Mil: Feasibility of a Systems-Level Collaborative Care Approach to Depression and Post-Traumatic Stress Disorder in Military Primary Care

COL Charles C. Engel, MC USA; Thomas Oxman, MD†; MAJ Christopher Yamamoto, MC USA‡;
MAJ Darin Gould, MC USA§; Sheila Barry, BA¶; Patrice Stewart, PhD||;
COL Kurt Kroenke, MC USA (Ret.)#; John W. Williams, Jr., MD**; Allen J. Dietrich, MD††*

RESPECT-Mil Dissemination Sites



OPORD 07-34-42 clinics at 15 sites

- Phase I
 - Ft. Drum, Ft. Bragg, Ft. Campbell, Ft. Hood, and Ft. Stewart
- Phase II
 - Ft. Benning, Ft. Bliss, Ft. Polk, Ft. Riley, and Ft. Carson
- Phase III
 - Ft. Lewis, Schofield Barracks, Vilseck and Schweinfurt, GE and Vicenza, IT

MEDICAL RECORD - RESPECT-Mil PRIMARY CARE SCREENING

For use of this form, see MEDCOM Circular 40-20; The Surgeon General is the proponent.

TODAY'S DATE: _____

The Army Surgeon General mandates that all Soldiers routinely receive the following primary health care screen. Please check the best answer to each of the questions on this page. Enter your personal information at the bottom and return this page to the medic or nurse.

PATIENT HEALTH QUESTIONNAIRE**SECTION I** *(Check all that apply):***Over the LAST 2 WEEKS, have you been bothered by any of the following problems?**

1. Feeling down, depressed, or hopeless.

☐ Yes ☐ No

2. Little interest or pleasure in doing things.

☐ Yes ☐ No**SECTION II** *(Check all that apply):***Have you had any experience that was so frightening, horrible, or upsetting that IN THE PAST MONTH, you...**

3. Had any nightmares about it or thought about it when you did not want to?

☐ Yes ☐ No

4. Tried hard not to think about it or went out of your way to avoid situations that remind you of it?

☐ Yes ☐ No

5. Were constantly on guard, watchful, or easily startled?

☐ Yes ☐ No

6. Felt numb or detached from others, activities, or your surroundings?

☐ Yes ☐ No**FOR OFFICIAL USE ONLY****PATIENT'S HEALTH QUESTIONNAIRE** *(Additional Comments):*

Provider please reference section and question number when entering additional comments from patient.
Please sign and date entry.

Respect-Mil Implementation Results



- 36 clinics now implementing (of 42)
- 70% of visits screened (versus 2-5% in non-RESPECT-Mil teaching clinic)
- 13% of all screened visits are positive
- 48% of positive screens result in a diagnosis of 'depression' or 'possible PTSD'
- 3% of visits involve recognition & assistance for previously unrecognized mental health needs

** Data through May 2010*

Policy Guidance for the Management of Concussion/mTBI in the Deployed Setting



- Directive-Type Memorandum (DTM) 09-033
- Issued 21 June 2010 by DEPSECDEF
- Involves commitment of line commanders and medical community
 - DCoE coordination with FHP/R, JS, CENTCOM, JTAPIC, Service TBI POC's
- Describes mandatory processes for identifying those service members involved in potentially concussive events
 - Exposed to blast, vehicle collision, witnessed loss of consciousness, other head trauma
- DCoE developed specific protocols for management of concussed service members and those with recurrent concussion
- Transition from symptom driven reporting to incident driven

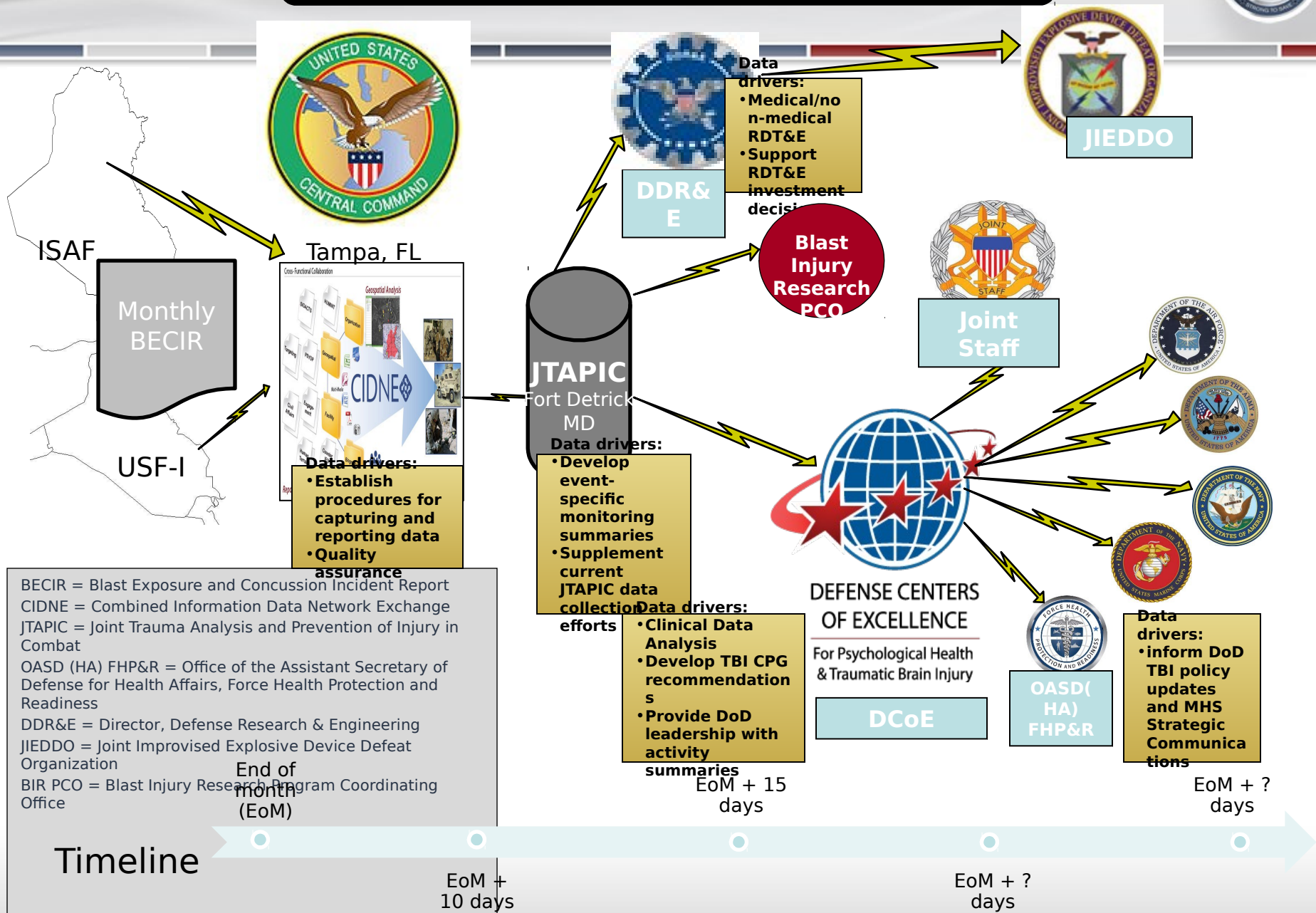
DESIRED END STATE: the mitigation of the effects of potential concussive events on both service member health, readiness and ongoing operations

Highlights from the DTM



- Mandatory **event driven protocols**, for exposure to potentially concussive events
- Requires a medical **evaluation and a rest** period
- All sports and **activities with risk** of concussion are prohibited **until medically cleared**
- Military Acute Concussion Evaluation (MACE) documentation will include **MACE 3-part score**
- Service Members diagnosed with mTBI will be given a **standardized educational sheet**
- New **protocols** for anyone sustaining **3** or more mTBIs within 12 months

MTBI DTM Data Flow





Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury and Defense and Veterans Brain Injury Center

Consensus Conference on Cognitive Rehabilitation for Mild Traumatic Brain Injury

27 and 28 April, 2009, Washington, DC

Cognitive Rehabilitation for mTBI



- Majority of civilian patients with mTBI (75-90% have symptoms that are transient and self-limiting
- Apparent full recovery occurring within minutes to several weeks following injury (Levin et al., 1997)
- Approximately 5-15% of persons with mTBI do not show the expected rapid and uneventful recovery and have persistent symptoms and/or functional limitations (Iverson et al., 2006; Ruff et al., 1996)
- Persistent mTBI symptoms include cognitive and emotional sequelae that can result in significant functional impairment and disability
- Cognitive rehabilitation is a well-accepted component of comprehensive rehabilitation for persons with moderate and severe TBI (Cicerone et al., 2005)
- A parallel situation does not exist in the area of mTBI

Cognitive Rehabilitation for mTBI



Core elements of a cognitive rehabilitation program

1. Assessment prior to treatment
2. Identification of Individualized Cognitive Rehabilitation goals that target:
 - Symptom reduction through restoration and compensation
 - Functional improvements/gains: activities of daily living, return to duty, vocational, avocational, interpersonal effectiveness, and social functioning
 - Therapeutic alliance: development of trust and mutually agreed upon goals of the cognitive rehabilitation program by the patient, family, and the treating clinicians
3. Development of an interdisciplinary Individualized Treatment Plan, addressing all associated conditions, as well as different demands of operational environment, pre-injury personality traits, occupational status and psychosocial stress
4. Periodic cognitive reassessment, review of goals, and updates to the clinical and re-integration plan
5. Development of well defined discharge plan to include specific criteria for community re-integration and follow-up

Cognitive Rehabilitation for mTBI



- Implementation at 13 MTFs
- Ft. Bragg, WRAMC, Redstone Arsenal, Ft. Campbell, Ft. Gordon, BAMC, Ft. Stewart, Ft. Riley, Elmendorf, Camp Pendleton, Portsmouth, Camp Lejeune, and San Diego
- Aug 2010 MTF's started tracking outcome measures identified in the Clinical Guidance Document
- Interim report due in February 2011

What is Hyperbaric Oxygen (HBO₂)?



- Intervention in which a patient breathes 100% oxygen intermittently inside a chamber that is pressurized to higher than sea level pressure
 - specifically to pressures of 1.4 atmospheres absolute or higher
 - creates supraphysiologic O₂ concentrations in blood and tissues ... which FDA considers a drug

FDA Approved Indications for HBO₂

- | | |
|---|--|
| ■ Decompression Sickness | - Crush Injuries |
| ■ Air/Gas Embolisms | - Enhanced Healing of Selected Wounds |
| ■ Carbon Monoxide Poisoning and Smoke Inhalation | - Exceptional Blood Loss |
| ■ Intracranial Abscess | - Radiation Tissue Damage |
| ■ Gas Gangrene | - Skin Grafts and Flaps |
| ■ Necrotizing Soft Tissue Infection | - Thermal Burns |
| ■ Osteomyelitis | |

HBO₂: DoD/VA TBI Research Program



USAF Phase II Study (n=50)

**Data
Review**

DARPA/VA/Navy Phase II Study (n=60)

**Rivermead Validation
Survey (n=1000)**

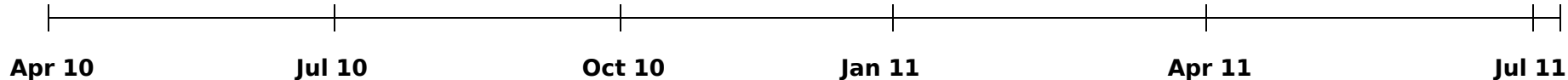
DSMB

**Outcome Validation
and Pilot (n=80-120)**

DSMB

Multicenter Pivotal Trial (n=300)
(n= 5-10 lead-in) In life until FY13

**OAC Healthy Comparator Study
(n=20-40)**





Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury

Meeting on Neuroendocrine Sequelae of Traumatic Brain Injury Literature Review

December 13, 2010, Silver Spring, MD

- In 2005, civilian guidelines (Ghigo et al.) proposed screening for pituitary dysfunction in all patients who sustained a moderate to severe TBI
- In 2010, civilian guidelines (Tanriverdi et al.) recommended screening for pituitary dysfunction in patients who sustained a mTBI



Blast Exposure/Head Trauma

Clinician Confirmed mTBI

Persistent symptoms at 3-6 months (including those attributable to TBI, or psychiatric disorder)

(-) Symptoms

(+) History of symptoms (including those attributable to TBI, or psychiatric disorder) at injury, but non at 3-6 months

Routine Screening on redeployment at least 3-6 months after injury

Abnormal

Normal

Endocrinology referral

Re-evaluate at 12 months. If symptomatic (including symptoms attributable to TBI, or psychiatric disorder), proceed with Routine Screening

Abnormal

Normal

Endocrinology referral

Repeat testing at clinically indicated if the patient begins to exhibit symptoms of pituitary dysfunction as new endocrinopathies have been shown to develop at 1-3 years



Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury

Driving Evaluations after Traumatic Brain Injury Conference

28 July 2009, Washington, DC

Purpose: To provide clinical recommendations to healthcare professionals within the Military Health System regarding the assessment of the ability to drive following traumatic brain injury, regardless of severity

Driving Following TBI



- Driving performance deficits associated with TBI-related neurocognitive impairments have been found in the areas of reaction time, visuomotor ability and perceptual and cognitive skills (Schneider & Gouvier, 2005)
- It is estimated that 40% to 80% of individuals with varying degrees of cognitive impairment resulting from TBI return to driving after their injury (Lew et al., 2005)
- The degree of risk for motor vehicle crashes after brain injury, however, is not consistent throughout the literature (Coleman et al., 2002).
- Individuals with TBI who complete a comprehensive driving evaluation reintegrate into the driving community without increased risk for accident (Rapport et al., 2006; Schultheis et al., 2002)

Driving Following TBI



- Goal: To ensure those who have sufficiently recovered from all severities of TBI have the opportunity to safely drive government and privately owned vehicles in accordance with federal and state guidelines
 - Safe operation of a motor vehicle is a complex task requiring interaction of operational, cognitive, and higher executive functions and perceptual abilities
 - A TBI can disrupt the complex interplay of functions
 - Individuals with all severities of TBI may be at risk for developing symptoms that affect fitness to drive
 - A driving evaluation is a two-step process: 1.) Driving screening 2.) Driving assessment
 - A driving screening should be considered for every individual with a TBI
 - A comprehensive driving assessment is usually reserved for patients whose driving screening results raise concerns

DCoE - Integrator



Best Practices

Identification

Evaluation

Dissemination

Innovative
Medical
Devices

Therapies

Standards
of
Care

Consensus
Panels

Psychological
Health

PTSD
Depression
Substance Use

Traumatic
Brain Injury

Mild
Moderate
Severe

Prevention and Healthcare

Research

Education and Training

Clinical
Practice
Guidelines

Research
Data

Clinical
Data

Treatment
Algorithms

Curricula

Knowledge
Management

Questions...



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